Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Federal-State Joint Board on	)	CC Docket No. 96-45
Universal Service	)	
	)	

ORIGINAL

COMMENTS OF NETSCAPE COMMUNICATIONS CORPORATION

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Dated: April 12, 1996

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SUMMARY

Netscape Communications Corporation ("Netscape"), the leading provider of client/server and related open software for Internet applications such as the World Wide Web, is fundamentally committed to technological innovation and continued growth for this revolutionary communications medium. Although Netscape is neither a telecommunications carrier nor an information services provider, the company is vitally interested in the development of the Commission's universal service policies under Section 254 of the Telecommunications Act of 1996 because they will profoundly impact the development of the telecommunications infrastructure in the United States and thus the ability of educational institutions, and all Americans, to access advanced information services via the Internet.

The Act requires a fundamental restructuring of universal service to conform the system to a new competitive telecommunications industry. Universal availability of advanced, competitive telecommunications services is the key building block for the continued growth and development of the Internet. The evolution of an effectively competitive telecommunications industry in turn depends on the elimination of pricing inefficiencies and competitive distortions that have arisen in telecommunications services from the system of implicit, internal subsidies built into the Commission's universal service scheme. Because the Internet represents the optimal means of meeting Section 254's mandate of making advanced telecommunications services and information service access available to all Americans, the Commission should not impose universal service contribution requirements on enhanced "information service" providers, but rather rationalize universal service policy in order to maximize free price

competition for the telecommunications infrastructure on which the Internet's "network of networks" is built.

There is no immediate inconsistency between the Act's command that the Commission assure "access" to advanced information services and its current exemption of information service providers from universal service support obligations. The Act's affordability goals and objective of securing information service access for rural subscribers and educational institutions are best met, as a matter of policy, by driving telecommunications service rates to true economic cost through competition, thus allowing Internet service providers to continue the present market trends of price reductions, expanded geographic availability and greatly augmented transport capacity. Yet in the long run, the limited model for universal service laid out in the Telecommunications Act of 1996 will need to give way to a new paradigm, in which all communications providers—regardless of regulatory classification—both contribute to and receive support from a "universal" universal service support system.

The Internet model of non-regulated, non-governmental administration is a perfect approach to the Commission's telecommunications universal service policies. The Commission should establish "macro-level" policies, leaving the detailed administration of universal service to the industry itself. Although the potential of the Internet is as revolutionary for education in America as it is for electronic commerce, the Commission should not establish a separate definition of universal service applicable to educational institutions at this time, because conclusions reached today, in the relative "infancy" of the Internet, as to technologies and functionalities necessary for K-12 access to the information potential of the World Wide Web will definitely *not*

support the features of the Internet as it matures through adolescence over the coming decade. The fast and "modern" telecommunications technologies of today are unlikely to be current in the future—which is often measured in mere months on the explosively growing Net.

The Commission instead should classify all Internet communications as jurisdictionally interstate—because the Internet is a global medium and Internet communications are completely distance-insensitive, almost entirely location-indifferent and virtually always interstate or international—and preempt state regulation of Internet access and services. The Commission can and should use its more flexible "advanced telecommunications incentives" and "telecommunications development fund" authority under Sections 706 and 707 of the Act to craft special measures for directly stimulating "wired" elementary and secondary schools. Netscape has been a major private sector participant in programs to enhance Internet access and informational literacy for America's schools, such as NetDay '96, and looks forward to working with the Commission to realize this profoundly revolutionary, and egalitarian, objective.

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COMMENTS OF NETSCAPE COMMUNICATIONS CORPORATION

Netscape Communications Corporation ("Netscape"), by its attorneys, respectfully submits these comments in response to the Notice of Proposed Rulemaking and Order Establishing Joint Board ("NPRM")[1] released by the Federal Communications Commission ("Commission" or "FCC") in the above-captioned proceeding.[2]

INTRODUCTION

Netscape, the leading provider of client/server and related open software for Internet applications such as the World Wide Web, is fundamentally committed to technological innovation and continued growth for this revolutionary communications medium. Although Netscape is not a telecommunications carrier or an information services provider, the company is vitally interested in the development of the

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[1] *Federal-State Joint Board on Universal Service*, Notice of Proposed Rulemaking and Order Establishing Joint Board, FCC 96-93, CC Docket No. 96-45 (released March 8, 1996)("NPRM")(http://www.fcc.gov/Bureaus/Common_Carrier/Notices/fcc96093.txt). By Order released April 1, 1996 (DA 96-483), the Common Carrier Bureau extended the date for filing comments in this proceeding to April 12, 1996.

[2] This document is also available via the Internet's World Wide Web at the following URL address—http://www.technologylaw.com/techlaw/us_comm.html.

Commission's universal service policies and rules under Section 254 of the Telecommunications Act of 1996[3] because they will profoundly impact the development of the telecommunications infrastructure in the United States and thus the ability of educational institutions, and all Americans, to access advanced information services via the Internet.[4] Directly or indirectly, the Commission's determinations in this docket will therefore play a large role in shaping the structure of the Internet and the availability of Internet access—and with it the revolutionary breadth of information available via the Internet to America and the world.

Section 254 of the Act does more than codify the Commission's historical emphasis on universal telephone service. It requires a fundamental restructuring of universal service to conform the system to a new competitive telecommunications industry. The Act expands the scope of the Commission's universal service authority to include maintaining "affordable" telecommunications services, directs the FCC to develop explicit and efficient mechanisms for achieving universal service, and requires the Commission to fashion special measures for assuring access to advanced telecommunications *and* information services for schools, libraries, hospitals and related public institutions. The Commission must therefore not only reassess its existing

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[3] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996)(to be codified at 47 U.S.C. § 151 *et seq.*). References to the 1996 Act will, for clarity, be to the sections of the Communications Act of 1934 as amended by the Act.

[4] The Internet is a complex global network consisting of thousands of independent computer networks run by private businesses, government agencies and educational and research institutions. Rather than a specific kind of network, however, the Internet is actually better thought of as a set of standards or protocols that lets various types of networks intercommunicate. The protocol, called Transmission Control Protocol/Internet Protocol or "TCP/IP," enables communications between public and private networks running over any medium: analog or digital phone lines, traditional network lines, fiber, and even cable television wires and wireless systems. It is also computer-independent, running across personal computers ("PCs"), Macintoshes, workstations, and mainframes.

universal service support mechanisms in light of these new requirements, but must also formulate a new universal service system compatible with the Act's procompetitive vision.

Universal service under the Telecommunications Act of 1996 is a watershed event, requiring the Commission to develop a new paradigm for achieving ubiquitous, affordable telecommunications services and information service access for all Americans. In order to achieve Congress' objectives in Section 254 of the Act, this new model for universal service will need to be flexible enough to withstand the transition to a fully competitive telecommunications industry, but sufficiently non-intrusive to avoid impeding technological innovation, advantaging certain sectors of the industry over others, or distorting effective price competition for the full range of telecommunications services. Yet achieving all these goals will likely be difficult in light of the adverse competitive effects of the Commission's historic universal service support mechanisms and the rapidly changing face of the United States telecommunications marketplace.

Netscape believes the Commission must focus on three immediate issues in resolving the tensions underlying Section 254 of the Act: (1) crafting a workable definition of universal service that can coexist with the introduction of competition in all segments of the telecommunications industry; (2) fashioning universal service support mechanisms that are explicit, external and competitively neutral; and (3) developing special provisions for educational and medical subscribers that will support the rapid inclusion of these institutions in the "Information Age" without compromising the continued development of the Internet as an open, interoperable and non-governmentally controlled medium for global communication. Our comments are

tailored to these key issues, leaving many of the subsidiary questions and detailed implementation matters to firms, such as the local exchange carriers ("LECs") and interexchange carriers ("IXCs"), that are far more familiar with the complexities of the Commission's universal service policies and rules.

DISCUSSION

I. CONTINUED GROWTH AND EXPANSION OF THE INTERNET REQUIRES A TELECOMMUNICATIONS INFRASTRUCTURE BASED ON FREE COMPETITION AND EFFICIENT, COST-BASED PRICING

Netscape is the premier provider of open software that enables people and companies to exchange information and conduct commerce over the Internet and other global networks. Netscape offers a full line of software to enable electronic commerce and secure information exchange on the Internet and private TCP/IP-based networks, including three families of products: Netscape Navigator client software, Netscape Server software, and Netscape Commercial Applications. Netscape software products offer easy-to-use interfaces for serving and accessing multimedia information on the Net, including formatted text, graphics, audio, and video. The products are based on voluntary industry-standard protocols and are fully compatible with other Hypertext Transfer Protocol ("HTTP") clients and servers.[5]

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[5] The company, headquartered in Mountain View, California, was founded in April 1994 by Dr. James H. Clark (http://home.netscape.com/people/jim/index.html), founder of Silicon Graphics, Inc. (http://www.sgi.com/), a Fortune 500 computer systems company, and Marc Andreessen (http://home.netscape.com/people/marca/index.html), creator of the NCSA Mosaic software (http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/ NCSAMosaicHome.html), the first "browser" for the Internet's World Wide Web. Netscape today employs nearly 800 people in 15 locations world-wide. Additional information on Netscape and the company's mission is available at http://home.netscape.comcomprod/netscape_mission.html and http://home.netscape.com/comprod/ exec_team.html.

Netscape's leadership role in the Internet extends to the same access and educational goals underlying Section 254 of the Act.[6] Netscape pioneered the concept of making client software available free via computer downloading, and still provides its software products under free licenses to qualifying educational and non-profit organizations.[7] Netscape was a major sponsor of "NetDay '96,"[8] the recently initiated computer industry initiative to wire all California public schools for Internet access, and "24 Hours In Cyberspace,"[9] a digital "time capsule" demonstrating the information potential of the Internet. The company participates in governance of the Internet through the World Wide Web Consortium ("W3C")[10] and the Internet Engineering Task Force ("IETF")[11], assisting the development and revision of open, interoperable, non-proprietary and non-governmental standards and protocols for the Internet.

Netscape is not a telecommunications service provider, not a common carrier of any sort, nor a manufacturer of either telecommunications or computer equipment. As a software company, Netscape provides the platform of choice for "browsing" the Internet's World Wide Web, coupled with related Internet applications such as electronic mail ("e-mail"), file transfer protocol ("FTP") and numerous emerging Internet technologies (*e.g.*, real-time video and audio). Thus, Netscape is not a "tele-

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[6] Section 254(h)(2)(A) directs the Commission "to enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunications and information services for all public and nonprofit elementary and secondary school classrooms, health care providers, and libraries."

[7] http://www.netscape.com/comprod/sales/educhar_faq.html#1

[8] http://www.netday96.com/

[9] http://www.cyber24.com/

[10] http://www.w3.org/pub/WWW/

[11] http://www.ietf.cnri.reston.va.us/home.html

communications carrier" under the Act[12]—either for local exchange, exchange access, interexchange or international communications—an online service provider ("OSP")[13] or an Internet service provider ("ISP"). Netscape's business and products support Internet communications over any medium, from twisted-pair telephony, ISDN and digital telecommunications facilities, to wireless and satellite systems.

Consequently, although Netscape is interested in the Commission's policies because they will affect the development of the telecommunications infrastructure underlying the Internet, Netscape believes it offers a unique perspective on universal service. Unlike many of the likely participants in this proceeding, Netscape does not carry or resell either telecommunications or enhanced services[14] and is not subject to universal service support obligations. Netscape shares a clear community of interest with many OSPs and ISPs, including firms with whom the company has entered into strategic partnerships, but Netscape also has important business relationships with a wide range of telecommunications carriers. Thus, Netscape can provide the Commission with insight into means to achieve the advanced telecommunications and

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[12] Section 153(51) defines "telecommunications service" as "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used." "Telecommunications" is "the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received. " Section 153(48). "Telecommunications carrier" is in turn defined in Section 153(49) as "any provider of telecommunications services," except aggregators. Netscape does not offer telecommunications services of any sort to the public.

[13] Online service providers, such as America Online (http://www.aol.com/) and CompuServe (http://www.compuserve.com/), combine content origination, computer database services and proprietary interfaces with access to the Internet. The common acronym for online service providers in the computer industry, "OSP," dramatically illustrates the accelerating convergence of computing and communications technologies, as "OSP" has traditionally denoted "operator service provider" in Commission parlance.

[14] *See* notes 15-16 and accompanying text *infra*. Netscape operates World Wide Web server sites, does not provide either Internet access or transport services, and is thus neither an "enhanced service

(Footnote continued on next page)

information service access goals of Section 254, unaffected by any direct financial interest in the Commission's universal support mechanisms, including access charges and the Universal Service Fund ("USF").

A. The Internet Represents the Optimal Means of Meeting Section 254's Mandate of Making Advanced Telecommunications Services and Information Service Access Available to All Americans

The Internet is beginning a fundamental transition into the broadband, commercial information superhighway of the future. Today, the Internet offers immediate opportunities for educational, community and commercial applications by connecting millions of Macintosh, PC and workstation users with governments, libraries, businesses and organizations around the world. Tomorrow, as network capabilities and performance increase, this global "network of networks" will deliver interactive services, information, and entertainment into consumers' homes. For its part, Netscape intends to lead companies and consumers throughout this transition, and to accelerate the coming of this new era with software tools that ease and advance online communications.

The Commission's universal service policies also will play an integral role in delivering the expansive promise of the Internet to American consumers. Section 254(b)(2) of the Act requires the Commission to base its universal service policy on the principle that "[a]ccess to advanced telecommunications and information services should be provided in all regions of the Nation." Universal availability of advanced, competitive telecommunications services is a fundamental building block for the

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provider" under the Commission's Rules nor an "information services" provider under the Telecommunications Act of 1996.

continued growth and development of the Internet, and thus for access to advanced information services. Although OSPs, ISPs and many other entities providing access to the Internet are enhanced service providers under the Commission's *Computer II* regime[15]—and "information services" providers under Section 153(41) of the Act[16]—these companies rely to a large degree on existing telecommunications carriers for the underlying transport facilities that constitute the Internet's backbone, as well as for local loop connections to individual Internet servers and users. Particularly given its explosive recent growth, and projections for even more rapid growth over the next five to 10 years,[17] the Internet is thus vitally dependent on a cost-based, competitive telecommunications industry, with appropriate market and regulatory incentives for the deployment of competitively priced broadband and high-bandwidth network facilities.

The development of an effectively competitive telecommunications industry in turn depends on the elimination of pricing inefficiencies and competitive distortions that have arisen in telecommunications services from the system of implicit, internal

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[15] *See, e.g., Computer & Communications Indus. Assn. v. FCC*, 693 F.2d 198 (D.C. Cir. 1982); *Amendment of Section 64.702 of the Commission's Rules and Regulations*, Report and Order, 2 FCC Rcd. 3072 (1987); 47 C.F.R. § 64.702(a)(1995)(defining "enhanced services" as those that involve computer processing of the "format, content, code, protocol or similar aspects" of information, involve "subscriber interaction" with stored data or provide "additional, different or restructured information").

[16] Section 153(41) of the Act defines "information service" as "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications. " This definition, drawn from the Modified Final Judgment in the AT&T antitrust case, is "substantially similar" to the Commission's definition of "enhanced services." *Amendment of Part 69 of the Commission's Rules Relating to Enhanced Service Providers*, 3 FCC Rcd. 2631, 2633 (1988).

[17] "Online Services: International Markets 1996," a recent research report by SIMBA Information, Inc. (http://www.simbanet.com), forecasts that OSP usage will grow more than 300% within five years, from 6.8 million users in 1995 to 20.8 million users by 2000. Total Internet usage is expected to increase even further, from 38 million users to 199 million users, over the same period. *See* charts in Exhibit A. World Wide Web usage alone is projected to double in the next 6-9 months alone. *Id.*

subsidies built into the Commission's universal service scheme. In large part, the existing interstate universal service scheme involves collecting revenues from IXCs, via access charges and USF funding requirements, that are paid to incumbent LECs and incorporated implicitly into LEC local exchange and access rates. This system is anachronistic in a competitive telecommunications environment. As the Common Carrier Bureau's February 1996 Staff Report on universal service recognizes, "in many cases, [these] implicit support mechanisms were not created pursuant to a specific regulatory directive, but rather were the result of pricing and cost-allocation practices that arose in the prior monopoly service environment, and may not be sustainable in a competitive market."[18] Bundling universal service revenues into incumbent LEC rates and using inter-carrier transfer payments as the central support mechanism distort marketplace competition by creating artificial price "floors" well in excess of economic cost, retarding interexchange usage by recovering non-traffic sensitive ("NTS") costs in per-minute access rates, and providing support revenues only to one class of telecommunications service provider.[19]

The Telecommunications Act of 1996 mandates a fundamental reexamination and revision of this anachronistic system. Section 254(b)(4) requires that "[a]ll providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service." The House-

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[18] *Preparation for Addressing Universal Service Issues: A Review of Current Interstate Support Mechanisms*, Common Carrier Bureau (Feb. 23, 1996)(http://www.fcc.gov/Bureaus/Common_Carrier/Reports/univserv.txt).

[19] Paragraph 28 of the NPRM highlights the anticompetitive impact of implicit universal service support mechanisms, "currently limited to LECs, [which gives LECs] a substantial advantage over competitors who must recover all of their costs from customers."

Senate Conference Committee Report declares that "any support mechanisms continued or created under new section 254 should be explicit, rather than implicit as many support mechanisms are today."[20] Explicit collection of universal support revenues requires de-linking universal service from the Carrier Common Line Charge ("CCLC"), thus freeing interstate access charges—and, as a result, IXC prices—from the burden of doing "double-duty" as a universal service support mechanism. *See* NPRM ¶ 113. Explicit and nondiscriminatory distribution of universal service revenues requires de-linking eligibility for support payments from LEC status, allowing all "eligible carriers" under Section 214(e) of the Act—regardless of regulatory classification or network facilities—the same opportunity to participate in the universal service system. *See* NPRM ¶ 41.

Rationalizing universal service for application to a competitive telecommunications market will, in turn, directly aid the Commission in achieving the Act's mandate that all Americans have access to advanced information services. First, ISPs, OSPs and other providers of Internet services will be able to purchase underlying telecommunications transport facilities and local exchange services at rates based on economic cost, with competition and technological innovation further increasing market pressures for Internet access rate reductions. Second, expanding eligibility for universal service support beyond existing LECs will eliminate the barrier to entry and price-distorting effect of linking subsidy payments to incumbent monopoly carriers, allowing new competitive local service providers and new loop technologies, including

[20] *Joint Explanatory Statement of the Committee of Conference*, H. Rep. No. 104-458, 94th Cong., 2d Sess. 131 (1996)("Conference Report")(http://www.technologylaw.com/techlaw/creport.html).

wireless telephony, to flourish without artificial regulatory impediments. Third, making universal service payments explicit, and targeting them more directly toward carriers and subscribers in high-cost and rural areas, will increase incentives for deployment of advanced "basic" telecommunications services in all regions of the United States, thus permitting Internet access providers to extend their enhanced service networks to areas in which Internet access is now unavailable or relatively costly.

B. The Internet Model of Non-Regulated, Non-Governmental Administration is a Perfect Approach to the Commission's Telecommunications Universal Service Policies Under Section 254 of the Act

Although it originated as a Department of Defense experiment in connecting geographically distant computer networks, the Internet is very successfully operated today as an unregulated, non-governmental and self-administered network for global information exchange. And the Internet continues its rapid evolution, with Internet access rates plummeting and the network's facility infrastructure expanding exponentially as providers add more and more backbone transport capacity to carry the hundreds of millions of packet-switched data "transactions" that comprise Internet communications on a daily basis. These trends will certainly continue for the foreseeable future, especially as major IXCs and LECs enter aggressively into the Internet access business.[21]

The Commission can usefully apply many aspects of the Internet model to achievement of universal telecommunications service and information service access

[21] Major telecommunications carriers that now offer or intend to provide Internet access services include AT&T's WorldNet (http://www.att.com/worldnet/wis/), internetMCI (http://www.internetmci.com/), Ameritech (http://www.ameritech.com/products/data/internet/index.html), Bell Atlantic (http://www.ba.com/nr/96/feb/2-23internet.html), BellSouth.net, Inc. (http://

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under Section 254. Universal service policy can best achieve the objectives of the Act by promoting the growth of the Internet under the existing non-regulated market structure. Whether or not the Act's authority for the Commission to expand universal support obligations beyond telecommunications carriers to "other provider[s] of interstate telecommunications"[22] extends to information service providers, it would be extremely unwise as a policy matter for the Commission to intervene in the autonomous, efficient self-administration of the Internet. By the same token, a robustly competitive telecommunications services industry should also be shielded from intrusive FCC policies by leaving as much of the administration of universal service as possible to carriers and the established telecommunications industry forums. As it has in the area of the North American Numbering Plan,[23] the Commission should establish appropriate "macro-level" policies, promote the interests of United States subscribers and carriers in an increasingly global communications marketplace, and leave the detailed implementation of the system to the industry itself. *See* NPRM ¶ 128 (non-governmental universal service fund administration).

II. THE DEFINITION OF UNIVERSAL SERVICE AND NEW UNIVERSAL SUPPORT MECHANISMS MUST BE DESIGNED TO FURTHER THE RAPID INTRODUCTION OF COMPETITION INTO ALL SEGMENTS OF THE TELECOMMUNICATIONS INDUSTRY

Achieving the Act's new paradigm for affordable, advanced telecommunications services and information service access requires that the Commission first fashion a

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www.bellsouth.com/headlines/bell_releases/RELEAS54.html) and US West !Interprise (http://www.uswest.com/NEWSRELEASES/NR240.HTM), among others.

[22] Section 254(d); *see* discussion at note 26 and accompanying text *infra.*

[23] *Administration of the North American Numbering Plan,* Report and Order, CC Docket No. 92-237, FCC 95-283 (released July 13, 1995).

definition of "universal service" (*e.g.*, NPRM ¶¶ 15-23, 77-81) for specific classes of recipients—including rural, low-income and educational subscribers—and then formulate new support mechanisms, identifying both the source of any subsidy and the criteria for calculating required carrier payments and withdrawals (*e.g.*, NPRM ¶¶ 27-39, 82-88). The Commission must be sensitive to the informational potential and evolving market structure of the Internet in pursuing both of these tasks.

The Telecommunications Act of 1996 essentially codifies the Commission's long-standing regulatory distinction between "basic" telecommunications and "enhanced" information services.[24] At the same time, the Act establishes the principle that the Commission should endeavor to make access to "advanced" telecommunications and information services available to all Americans. *See, e.g.*, NPRM ¶ 5. These twin directives provide a charter for the FCC to spearhead the growth and expansion of the Internet, thus securing advanced information access via the best available medium for the "information superhighway," by fostering the fully competitive telecommunications services market on which the Internet depends.

The Commission does not have specific statutory authority to include the Internet and information services within the definition of universal service. Section 254(c)(1) of the Act provides that universal service is "an evolving level of *telecommunications* services" to be formulated in this rulemaking, and adjusted as necessary to reflect market and technological changes. Likewise, the Act does not currently permit the FCC to impose universal service support obligations on ISPs, OSPs and other

[24] *See* notes 12-16 and accompanying text *supra*.

Internet service providers, since as "information service" providers these entities are not subject to the requirement of Section 254(d) that "[e]very *telecommunications carrier* that provides interstate telecommunications services shall contribute" to the Commission-devised universal service support mechanisms.[25]

The factors identified for Commission "consideration" under Section 254(c)(1) of the Act again demonstrate that the FCC's appropriate role respecting the Internet is to promote the affordable, competitive telecommunications infrastructure on which access to advanced information services depends. This section is similarly limited to "telecommunications services," and specifies that the Commission should evaluate the degree to which specific telecommunications services "are being deployed in public *telecommunications* networks by *telecommunications* carriers." *Id.* § 254(c)(1)(C)(emphasis supplied). Accordingly, although the Commission seeks comment on whether "Internet access availability" should be included "in the list of services that are supported by universal service support mechanisms," NPRM ¶ 23, the current language, structure and policies of the Telecommunications Act of 1996 preclude any such expansion of the universal service definition beyond "telecommunications" services into enhanced "information" services.[26]

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[25] *See* NPRM ¶ 119. The structure of the Act is fully consistent with the plain language of Section 254(d), because only "eligible telecommunications carriers" designated under Section 214(e) qualify to receive universal support pursuant to Section 254. The Act's legislative history clearly supports this conclusion as well. The Conference Report states that only eligible "telecommunications carriers" may receive universal service support, and must use such support "in the area for which the support is received." Conference Report at 131.

[26] The Commission's discussion of its Section 254(d) authority to expand universal support obligations to "other providers of interstate telecommunications," NPRM ¶ 119, recognizes expressly that such "other providers" are limited to providers of "telecommunications" under the Act, not information services. Thus, the Commission's public interest discretion under Section 254(d) does not currently permit the imposition of universal support obligations on providers of Internet access and services.

There is no immediate inconsistency between the Act's command that the Commission assure "access" to advanced information services and its current exemption of information service providers from universal service support mechanisms.[27] First, the Act's affordability goals and objective of securing "access" to information services for rural subscribers and educational institutions are best met, as a matter of policy, by driving telecommunications service rates to true economic cost through competition,[28] thus allowing OSPs, ISPs and other Internet access providers to continue the present market trends of price reductions, expanded geographic availability and greatly augmented transport capacity. Second, the market for Internet access, and the Internet itself, are changing extremely rapidly; current access and content provider relationships for Internet services thus do not necessarily reflect the long-term structure of the "information superhighway" as it will evolve in the future. Any attempt now by the Commission to fashion universal service mechanisms for directly subsidizing Internet access and services would accordingly risk premature interference in an emerging, technologically vibrant, global marketplace. The unintended consequences of such governmental involvement in the Internet would in all likelihood be worse than any benefit produced by artificial improvements in availability or affordability of Internet access in the short run.[29]

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[27] It is significant that the Act does not direct the Commission to make information services available, but rather to formulate mechanisms for ensuring "access" to information services. *See, e.g.*, Section 254(c)(1).

[28] Where cost-based rates would result in an increase in prices, as possible in some rural or high-cost regions, the Commission of course has ample authority under Section 254 to fashion explicit and competitively neutral mechanisms for preserving affordable telecommunications services for subscribers.

[29] For instance, were the Commission to include Internet access and service providers as sources of universal service support contributions, virtually insoluble problems of calculating an appropriate contribution for each "provider" would arise. Even if precise measurement of subscriber Internet usage
(Footnote continued on next page)

A simple example demonstrates the unsound basis for any Commission attempt today to devise support mechanisms for Internet access. In its discussion of educational universal service (addressed in detail in Section III of these comments), the Commission emphasizes that only a small proportion of K-12 schools are currently connected to the Internet, NPRM ¶ 79, and observes that facilities such as 1.5 Mbps T1 carriers or ISDN/ADSL services may be necessary "to have instantaneous transmission or to handle multiple connections simultaneously" in America's public schools. *Id.* ¶ 80 n.174. But the fast and "modern" technologies of today are unlikely to be current in the future—which is often measured in mere months in the Internet and telecommunications industries. For example, even higher-speed facilities for Internet access, such as cable modems,[30] are already being tested, and many newer telecommunications services are well-positioned to provide Internet access at transfer speeds orders of magnitude higher than current computer modems permit over analog twisted-pair local exchange

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were technically feasible, calculating support payments based on interstate online minutes, data packets transmitted or bytes sent or received would all be impossible, since by definition the Internet is a destination and distance-insensitive network. International issues arise as well, because Internet communications move globally as easily as they do across state lines—transparently to the user—with virtually imperceptible differences in transmission speed. Moreover, in light of the myriad differentiations in current Internet access pricing schemes—from hourly charges to flat-rated, time-insensitive plans—such a Commission approach would directly impact pricing and competition in the robust Internet services market. This demonstrates not only that traditional telecommunications pricing and policy models are highly unsuited to the unique medium of the Internet, but also that expanding the potential "pool" of universal service contributors to include information services providers risks serious and unnecessary regulatory interference with a competitive, market-driven industry.

[30] *See, e.g.*, "Cable Modems: The Big Daddy of Data Haulers?," Business Week, Jan. 29, 1996 (http://www.businessweek.com/1996/05/b346093.htm). Tele-Communications, Inc. has partnered with a venture capital firm to offer a cable modem-based Internet access service, known as "@Home Network," that is scheduled to be launched in 1997 (http://www.home.net/). @Home "uses proprietary network technology to maintain high speed connections that are orders of magnitude faster than existing dial-up or ISDN offerings." (http://www.home.net/home2/speed.html)

facilities.[31] With this plethora of emerging technologies for Internet access and transport, crafting a workable system of universal service support for Internet service providers would be difficult, and perhaps impossible in light of the Act's command that support mechanisms be explicit, specific and nondiscriminatory. As the NPRM recognizes in the context of rural and high-cost areas, the Commission's universal services goals should "be achieved in the context of regulatory objectives that include promoting competition and reducing regulation in a manner that is technology-neutral." NPRM ¶ 66, *citing* Section 254(c)(1).

In the short run, the Commission's best policy to ensure access to information services is therefore to rationalize universal service support mechanisms—providing explicit, external, competitively-neutral support obligations for telecommunications carriers—in order to eliminate the price-distorting and anticompetitive effects of its current USF and related universal service policies.[32] Indeed, by making universal service explicit and external, the Commission may well find that the actual level of

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[31] For instance, just days ago US West announced that using an Asymmetric Digital Subscriber Line ("ADSL") and single pair High-bit-rate Digital Subscriber Line ("HDSL") product suite, it is conducting technical trials in Minneapolis and Denver of an Internet access service that can deliver data over twisted-pair loops at speeds more than 50 times faster than currently possible with 28.8 Kbps modems (http://www.uswest.com/ NEWSRELEASES/NR240.HTM). Other new technologies with significant Internet access potential include Direct Broadcast Satellite ("DBS") and Low Earth Orbit ("LEO") satellites, wireless services such as Personal Communications Services ("PCS") and Local Multipoint Distribution Services ("LMDS").

[32] Similarly, in *Investigation on the Commission's Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643*, the California Public Service Commission determined that universal support policies must (1) "quantify the basic service subsidy," (2) make the subsidy "explicit and separate from the LECs' existing rate structure," and (3) ensure that support mechanisms are "competitively neutral." D.95-07-050, R.95-01-020, I.95-001-021, at p.45 (July 20, 1995).

support needed is far lower than the sum total of the revenues collected today from IXCs and bundled into LEC access and local exchange rates.[33]

Over the longer term, however, limiting universal service obligations, and Section 214(e) eligibility, exclusively to telecommunications carriers may be too narrow a basis to meet the need for an "evolving" level of universal service. The current telecommunications infrastructure still consists principally of circuit-switched telephone networks, with copper local loop facilities to each customer's premises. Given the rapid pace of technological change, however, the telecommunications industry of the next decade may well evolve completely differently from its historic roots in the "public switched telephone network." Furthermore, digital transmission is steadily blurring the distinction between types of communications, as voice, video, fax and data communications are all increasingly carried over both telecommunications and information service networks. Thus, in the long run, the model for universal service laid out in the Telecommunications Act of 1996 will need to give way to a broader, more flexible system, in which all communications providers—regardless of regulatory classification—both contribute to and receive support from a "universal" universal service support system.

While this new paradigm for universal service appears to be beyond the Commission's current statutory authority under the Act, the decisions in this proceeding should be assessed with a keen appreciation for the fact that as telecommunications and information services evolve, newly fashioned universal

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[33] The Senate Report confirms that "the Committee expects that the preservation and advancement of universal service, including the evolving definition of universal service, can be
(Footnote continued on next page)

support mechanisms that today are efficient and procompetitive may, well within the next decade, yield market distortions equally injurious to competition and consumer welfare as the current system of implicit, access charge oriented universal service payments. In Commissioner Chong's terms, long-term universal service policy requires the Commission to "Think Outside the Box!"[34]

III. EDUCATIONAL INSTITUTIONS CAN BE ASSURED OF ACCESS TO INTERNET SERVICES BY APPLICATION OF THE COMMISSION'S AUTHORITY FOR ADVANCED TELECOMMUNICATIONS INCENTIVES AND THE TELECOMMUNICATIONS DEVELOPMENT FUND

The potential of the Internet is as revolutionary for education in America as it is for electronic commerce. Elementary and secondary schools—the intended beneficiaries of the Snow-Rockefeller-Exon-Kerrey amendment that became Section 254(h) of the Act—are the first stage in ensuring that all Americans achieve "informational literacy,"[35] skills that will become increasingly important to personal success and America's global competitiveness in the next decade. As a leader in the Internet community, Netscape is committed to ensuring that America's elementary and secondary school ("K-12") classrooms have access to the wealth of information and resources available on the Net. We commend Chairman Hundt's recent acknow-

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accomplished without any increase in the overall nationwide level of universal service support that occurs today." S. Rep. No. 104-23, 104th Cong., 1st Sess. 25-26 (1995)("Senate Report").

[34] Speech by Commissioner Chong to the Federal Communications Bar Association (http://www.fcc.gov/chngbox.html).

[35] Although the NPRM emphasizes that "technological literacy" is important to our economy, NPRM ¶ 72, the reality is that technology is merely one tool for finding, compiling and using information. In reality, "informational literacy" is more important than technical skill, as it encompasses both technological and social values that are necessary for success in a modern, global economy. "Informational literacy" includes reading, writing, computing, computer networking, navigational/indexing/searching capabilities, communication literacy, community awareness and online civility. Access to the Internet can assist schoolchildren in learning all of these skills, although the need for human interaction and personal teacher supervision is perhaps greater in today's digital age than it has ever been before.

ledgment that "the World Wide Web is the path to equal opportunity in education for all children in our country."[36]

A. The Commission Should Not Create a Separate Universal Service Definition for Schools

The Commission's charter in Section 254(b)(6) of the Act is that "[e]lementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services." The Commission "may designate additional services" for inclusion in the definition of universal service applicable to schools and libraries under Section 254(c)(3). In turn, Section 254(h) of the Act contains two key provisions regarding educational institutions. First, the Commission is instructed to formulate discounts on interstate telecommunications services for educational institutions. Second, the Commission is required to craft competitively neutral rules "to enhance, to the extent technically feasible and economically reasonable, access to advanced telecommunications and information services" for public and nonprofit K-12 schools and libraries. 47 U.S.C. §§ 254(h)(1)(B), 254 (h)(2)(a).

Although the purpose and spirit of these provisions is apparent, their application is problematic. With respect to the Internet, most of the *telecommunications* services used by subscribers to access an OSP, ISP or other Internet provider—such as local Direct Inward Dial ("DID") lines into a provider's modem banks, or dedicated T1 and frame-relay connections—are usually considered local exchange or intrastate services. For the Internet, however, these traditional jurisdictional classifications are inapposite. The

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[36] Speech by Chairman Hundt to the Iowa Distance Learning Association Third Annual Conference, March 1, 1996, at 2. Netscape also shares the FCC's commitment to expanding participation in Commission proceedings by effective use of the Internet. A prime example of use of the Internet for *(Footnote continued on next page)*